The Conflict between Public Health Goals and the Temperance Mentality

Stanton Peele, PhD

ABSTRACT

Objectives. The prevailing view today is that alcohol consumption is unambiguously a social and public health problem. This paper presents evidence to balance this view.

Methods. Evidence of beneficial effects of alcohol against coronary artery disease is examined, together with cultural reasons for resistance in the United States to the implications of this evidence.

Results. Alcohol use reduces the risk of coronary artery disease—the major cause of heart disease, America's leading killer—even for those at risk for such disease. Moreover, recent research indicates that alcohol continues to reduce risk at the higher levels of drinking measured in general populations. However, with consumption of more than two drinks daily, these gains are increasingly offset by greater mortality from other causes.

Conclusions. Educators, public health commentators, and medical investigators are uneasy about findings of healthful effects of drinking. A cultural preoccupation with alcoholism and the negative effects of drinking works against frank scientific discussions in the United States of the advantages for the cardiovascular system of alcohol consumption. This set has deep roots in American history but is inconsistent with public health goals. (*Am J Public Health.* 1993;83:805–810)

Today there is a public health debate in America over how to deal with beverage alcohol. The dominant approach, the disease model of alcoholism, emphasizes the biological—probably inherited—nature of problem drinking.[1] This model is challenged by the public health model, which strives to limit alcohol consumption for everyone in order to reduce individual and social problems.[2] The first approach is medical and treatment-oriented and the second is epidemiologic and policy-oriented; however, both present alcohol in fundamentally negative terms.

We hear little from those who hold the view that alcohol consumption satisfies an ordinary human appetite and that alcohol has important social and nutritional benefits. Yet at one time, the official position of the National Institute on Alcohol Abuse and Alcoholism under its founding director Morris Chafetz was that moderation in drinking should be encouraged and that young people should be taught how to consume alcohol moderately. This attitude has been completely expunged from the American scene. National and local antidrug campaigns produce banners to be displayed at schools throughout the United States declaring "ALCOHOL IS A LIQUID DRUG." Educational curricula are completely negative toward alcohol. Indeed, they attack the concept of moderate drinking as indefinable and dangerous. The logically inconsistent ideas that youthful drinking creates lifetime problem drinking and that alcoholism is inherited are merged into implausible, alarmist messages, such as this one in a school newsletter sent to one high school's entering freshmen:

- Alcoholism is a primary chronic disease.
- A person who begins to drink at 13 years of age has an 80% risk of alcoholism and an extremely high risk of using other drugs.
- The average age at which kids begin to drink is 11.7 for boys and 12.2 for girls.[3]

Selden Bacon, a founder and longtime director of the Rutgers (formerly Yale) Center for Alcohol Studies, criticized this set of attitudes. Bacon's position is intriguing, because the Yale Center played an integral role in the National Council on Alcoholism's successful campaign to convince Americans that alcoholism was a rampant and unrecognized American epidemic. Bacon ruefully commented on what this effort had wrought:

> Current organized knowledge about alcohol use can be likened to . . . knowledge about automobiles and their use if the latter were limited to facts and theories about accidents and crashes. . . . [What is missing are] the positive functions and positive attitudes about alcohol uses in our as well as in other societies. . . . If educating youth about drinking starts from the assumed basis that such drinking is bad [and] . . . full of risk for life and property, at best considered as an escape, clearly useless per se, and/or frequently the precursor of disease, and the subject matter is taught by nondrinkers and antidrinkers, this is a particular indoctrination. Further, if 75–80% of the surrounding peers and elders are or are going to become drinkers, there [is] . . . an inconsistency between the message and the reality.[4]

Drinking in America

The level of alcohol consumption in colonial America was many times its contemporary level, but alcohol was not considered a social problem, regulation of antisocial drinking behavior was strictly enforced in the tavern by informal social groups, and alcohol was widely considered a benign and healthful beverage. The temperance movement was launched in 1826, and for another century America warred over the prohibition of alcohol. Throughout the last century and the current one, alcohol consumption fluctuated, drinking was at different times associated with personal freedom and a modern lifestyle, and temperance attitudes always remained central to large groups of Americans while periodically surfacing as a core part of the American psyche.[5]

These crossing currents have left a patchwork of drinking attitudes and behavior in the United States, to wit:

Stanton Peele, PhD, is a psychologist, addiction expert, and health researcher.

Requests for reprints should be sent to Stanton Peele, PhD, 27 W Lake Blvd, Morristown, NJ 07960.

TABLE 1—Temperance and Nontemperance Western Countries: Alcohol Consumption, Alcoholics Anonymous (AA) Groups, and Deaths from Heart Disease

	Temperance Countries[a] (n = 9)	Nontemperance European Countries[b] (n = 11)
Consumption, 1984, liters per capita[c,d]	8.7	14.1
% alcohol consumed as spirits, 1984[c,e]	33.3	17.1
% alcohol consumed as wine, 1974[c,e]	13.2	43.3
AA groups per million population, 1991[f,g]	167.1	40.9
Heart disease death rate, men aged 55–64 y, 1972[d,h]	775	410

[a]United States, Canada, Great Britain, Australia, New Zealand, Finland, Sweden, Norway, Iceland.
[b]Austria, Belgium, Denmark, France, Ireland, Italy, The Netherlands, Portugal, Spain, Switzerland, West Germany.
[c]Data are taken from Levine,[14] whose data did not include the percentage of alcohol consumed as wine in 1984.
[d]Significance levels by *t* tests <.001.
[e]Significance levels are <.01.
[f]1991 AA membership is based on a mimeographed form provided by Alcoholics Anonymous World Headquarters in New York City, and 1991 population estimates are from the 1993 *World Almanac*.
[g]The AA groups comparison is not significant despite the large difference in means because of large within-group variance (temperance group SD = 238). The highest ratio of AA groups in 1991 was in Iceland (784 per million people), but the next highest was for Ireland (201 per million). Although Ireland is listed as a nontemperance country, it is the Catholic nation that could most easily be called a temperance culture, with its history of antidrinking campaigns and the lowest alcohol consumption and percentage wine consumption among Western Catholic nations. The lowest per capita AA group ratio in 1991 was for Portugal (.6 AA groups per million people); the lowest ratio for a temperance country was in Norway (28 AA groups per million).
[h]The 1972 heart disease death rate is from LaPorte et al.[15] and does not include Iceland.

1. America has a high percentage of abstainers (the Gallup Poll[6] put this figure at 35% in 1992).

2. Abstinence and attitudes toward alcohol vary widely by region of the country, social class, and ethnic group. For example, those with less than a high school degree are highly likely to abstain (51%). Few Italian, Chinese, Greek, and Jewish Americans abstain, but few have drinking problems (Glassner and Berg[7] calculated that 0.1% of the Jews in an upstate New York city were alcoholic; this figure is a fraction of the alcoholism rate for all Americans), and the idea of alcohol as a social problem is alien to these cultural groups.

3. High abstinence and problem drinking rates are associated in some groups. Those with high income and education levels are more likely than other Americans both to drink (about 80% of college graduates drink) and to drink without problems.[8] George Vaillant[9] found that although Irish Americans had a much higher abstinence rate than Italian Americans, they were nonetheless seven times as likely as Italian Americans to become alcoholic.

4. Superimposed on these conflicting patterns of drinking behavior has been a steady overall decline in drinking in the United States for more than a decade and the appearance of what some term a "new temperance movement."[10]

5. American adolescents continue to drink at high rates, not only bucking larger American drinking trends, but contravening their own reduction in illicit drug use over the last decade. Almost 90% of high school seniors say they have begun to drink, and 40% of senior boys binge-drink regularly.[11]

6. Nonetheless, a majority of Americans continue to drink without problems; this majority is sandwiched between the minority with drinking problems and the somewhat larger minority of abstainers.[8]

7. Many of these moderate drinkers are former problem drinkers, "75% [of whom] will likely 'mature out' of their excessive drinking, often without any formal intervention."[12] The percentage of high school and college students who moderate their excessive drinking is even higher.

Drinking in Different Western Societies

As alcoholism has come to be conceived as a biological, medical disease, cross-cultural analysis of patterns of drinking has almost disappeared and we rarely hear today of massive cross-cultural differences in drinking styles. Yet these differences persist as strongly as ever, influencing even diagnostic categories and conceptions of alcoholism in different societies. When an American clinician, William Miller, ventured to Europe, he observed "huge national differences in what is recognized to be a harmful amount of alcohol consumption":

> The American samples that I have defined as "problem drinkers" in my treatment studies have reported, at intake, an average consumption of approximately 50 drinks per week. In Norway and Sweden, the audiences tended to be shocked by this amount of drinking and argued that my samples must consist of chronic addicted alcoholics. In Scotland and Germany, on the other hand, the skepticism tended to be aimed at whether these individuals had a real problem at all because this level was regarded as quite ordinary drinking.[13]

One insightful conception of cultural differences in drinking attitudes and behavior has been put forward by Harry G. Levine,[14] who classified as "temperance cultures" nine Western countries that have generated large-scale, sustained temperance movements in the 19th or 20th centuries. All are predominantly Protestant, English-speaking (United States, Canada, Great Britain, Australia, New Zealand) or Northern Scandinavian/Nordic countries (Finland, Sweden, Norway, Iceland).

There are several differences between the temperance cultures and 11 "nontemperance" European countries identified by Levine (Table 1).

1. Temperance cultures are much more acutely concerned with the dangers of alcohol, as demonstrated not only by the temperance movements they have sustained, but by their high Alcoholics Anonymous memberships. The number of Alcoholics Anonymous groups per capita in the temperance countries is, on average, more than four times higher than the number in the nontemperance countries. (The United States continues to have a large majority of the Alcoholics Anonymous groups in the Western industrial world.)

2. Temperance countries drink considerably less alcohol than do nontemperance countries. They do consume a higher percentage of their alcohol in the form of distilled spirits, which leads to more of the staggering, public drunkenness related to

the classical loss-of-control model of alcoholism, which has been Alcoholics Anonymous's focus.

3. Nontemperance Western countries consume a much higher percentage of their alcohol as wine, which is associated with the kind of domesticated drinking patterns in which alcohol is drunk as a beverage at meals and at family, social, and religious gatherings that unite those of different ages and both sexes.

4. Levine's analysis[14] demonstrates that, despite reference to supposedly scientific and medically objective bases for alcohol policies, societies rely on historical, cultural, and religious attitudes for their stances toward beverage alcohol.

5. LaPorte et al.[15] found a strong inverse relationship cross-culturally between consumption of alcohol (primarily represented by wine) and death rates from atherosclerotic heart disease. LaPorte et al.'s and Levine's[14] analysis overlapped for 20 countries (LaPorte et al. included Japan but not Iceland). Table 1 shows the large and significant difference in heart disease death rates between temperance and nontemperance countries.

Indeed, the "red wine paradox"—noted in France, where much red wine is drunk and where men have a substantially lower death rate from heart disease than do American men—has been the most popular evidence of the positive effects of alcohol, particularly since the television show *60 Minutes* featured a segment on this phenomenon in 1991. However, Protestant–Catholic, Northern–Southern European, dietary and other differences correspond with red wine consumption and confuse efforts to account for specific differences in disease rates. Furthermore, epidemiological studies have not found that the form of alcoholic beverage consumed affects heart disease rates.

Does Alcohol Prevent Cardiovascular Disease? If So, at What Levels of Drinking?

The depth of American antialcohol feeling is expressed in the controversy over alcohol's protective effect against coronary artery disease and coronary heart disease (both terms, which have the same meaning, are used by the authors discussed in this article). In a comprehensive 1986 review, Moore and Pearson[16] concluded, "The strength of existing evidence makes new and expensive population-based studies of the association of alcohol consumption and CAD [coronary artery disease] unnecessary." Nonetheless, in a 1990 article on the negative effects of alcohol for the cardiovascular system that was based primarily on alcoholic drinking, Regan[17] declared "a preventive effect of mild to moderate drinking on coronary artery disease is, at present, equivocal, largely due to the question of appropriate controls." The primary justification for this doubt has been the British Regional Heart Study, in which Shaper et al.[18] found that nondrinkers were at minimal risk for coronary artery disease (as opposed to ex-drinkers, who were older and who may have quit drinking due to health problems).

Nearly one of two people in the United States dies of cardiac causes. Two thirds of these deaths are due to coronary artery disease, which is caused by the fatty deposits in the blood vessels characteristic of atherosclerosis. The less common forms of cardiovascular disease include cardiomyopathy, ischemic (or occlusive) stroke, and hemorrhagic stroke. Ischemic (occlusive) stroke behaves like coronary artery disease in response to drinking.[19,20] Nonetheless, all other sources of cardiovascular mortality taken together increase at lower levels of drinking than does coronary artery disease.[20] The most likely mechanism in alcohol's positive effect on coronary artery disease is that alcohol increases high-density lipoprotein levels.[21]

Following are the conclusions of research on the relationship of drinking to coronary artery disease:

1. Alcohol reduces coronary artery disease substantially and consistently, including incidence, acute events, and mortality. The large population multivariate prospective studies on alcohol and coronary artery disease reported since the 1986 Moore and Pearson review[16] include those shown in Tables 2 and 3,[19–23] along with the American Cancer Society study.[24] These six studies had populations in the tens and even hundreds of thousands; taken together, they numbered about a half million subjects of varying ages, both sexes, and different economic and racial backgrounds—including groups at high risk for coronary artery disease. The studies were able to adjust for concurrent risk factors—including diet, smoking, age, high blood pressure, and other medical conditions—and to allow for separate analyses of lifetime abstainers and ex-drinkers,[20,23] drinkers who reduced their consumption for health reasons,[19] all nondrinkers,[22] and coronary artery disease risk candidates.[20,21] The studies consistently found that coronary artery disease risk is reduced by drinking. Taken together, they make the risk reduction link between alcohol and coronary artery disease close to irrefutable.

2. An inverse relationship between drinking and coronary artery disease risk through the highest levels of drinking has been observed in large-scale multivariate studies. Studies adjusting risk of coronary artery disease for concurrent risk factors correlated with drinking level, such as high-fat diets[19,22] and smoking, indicate that risk is reduced at higher levels of drinking than previously thought. Relative to abstinence, *more* than two drinks daily optimally reduced risk for coronary artery disease (by 40% to 60%) (Table 2). This protective effect is robust even at the level of six drinks or more, although the Kaiser[20] and American Cancer Society[24] mortality studies showed an upturn in coronary disease risk at higher levels of drinking (see Table 3 for the Kaiser[20] findings). Although the American Cancer Society study of 276 802 men reported a lesser degree of risk reduction from drinking, this study is anomalous in its sample's remarkably high abstinence rate of 55% (twice the rate for men reported by the Gallup survey[6]).

3. Overall mortality risk levels off at three and four drinks daily, owing to the rise in other causes of death, such as cirrhosis, accidents, cancer, and cardiovascular diseases other than coronary artery disease, such as cardiomyopathy[20,24] (see Table 3 for the Kaiser[20] findings). However, some major causes of alcohol-related death in the United States—such as accidents, suicide, and murder—vary from society to society and are not inevitable consequences of high levels of drinking. For example, different policies toward drinkers can reduce drinking accidents,[25] and violence toward oneself and others cannot be shown to be a result simply of a chemical reaction called "alcoholic disinhibition."[26]

4. Style, mood, and setting elements of drinking can affect the health consequences of drinking as much as the amount of alcohol consumed. Little epidemiologic attention has been given to patterns of drinking, although one study found that binge drinking led to more coronary occlusions than did regular daily drinking.[27] Harburg and associates have shown that mood and setting when drinking are better predictors of hangover

TABLE 2—Prospective Studies Finding an Inverse Relationship between Coronary Artery Disease (CAD) and Alcohol Consumption, 1986 through 1992

Study and Population	No. Drinks Consumed Per Day[a]	Adjusted Risk Relative to Abstainers
Klatsky et al.[23]		(CAD hospitalization)
85 001 Black, White, and	<1	.65
Hispanic Kaiser-Permanente	≤2	.55
enrollees of both sexes	≤5	.54
	≤8	.52
	≥9	.47
Stampfer et al.[19]		(Severe CHD incidence)
87 526 female nurses aged	<1 (per week)	.8
34–59 years	<2	.6
	≥2	.4
Rimm et al.[22]		(CAD incidence)
51 529 male health professionals	<1	.79
aged 40–75 years	1	.68
	≤2	.73
	≤4	.57
	>4	.41
Suh et al.[21]		(CHD mortality[b])
11 688 men at risk for CAD,	≤1	.76
average age 46 years	≤2	.84
	≤3	.59
	>3	.63

Note. CHD = Coronary heart disease, the term used by Stampfer et al.[19] and Suh et al.[21]
[a]Consumption was converted from grams for Stampfer et al.[19] and Rimm et al.[22] by the formula 25 g = two drinks.
[b]"The adjusted relative risk for death from CHD for each increase of seven drinks per week was .89, with an apparent dose-response relationship."

TABLE 3—Relative Risk of Death from Coronary Artery Disease (CAD), All Cardiovascular Disease, and All Causes

No. Drinks Consumed	RR CAD, Total Sample	RR CAD, Those at CAD Risk	RR CAD, No CAD Risk	RR CAD, Women	RR CAD, Age ≥ 60	RR All Cardiovascular Disease	RR All Causes
<1 per day/ >1 per month	.8	.8	.7	.4	.5	.8	.9
1–2 per day	.7	.8	.6	.7	.5	.7	.9
3–5 per day	.6	.5	.6	.2	.4	.8	1.0
≥6 per day	.8	.9	.6	.6	.5	1.0	1.4

Note. These figures are from the 1990 Kaiser Study of 123 840 adults; they represent the relative risk (RR) of death compared with lifelong abstainers in each category, adjusted for age, sex, race, smoking, body mass, marital status, and education.
Source. Reprinted with permission from Klatsky et al.[20,tbls 2,4] Copyright © 1990 *American Journal of Cardiology.*

symptoms than is the amount of alcohol consumed,[28] and that hypertension can be better predicted from a drinking measure including psychosocial variables than solely from amount of alcohol consumed.[29]

5. The beneficial effects of drinking extend to all population and risk categories, including those who are at risk for and those who have symptoms of coronary artery disease. Suh et al.[21] found a reduction in coronary artery disease mortality in asymptomatic men at risk for coronary artery disease. Klatsky et al.[20] found even greater than average reduction of risk of coronary artery disease mortality from drinking for women and elderly subjects. For patients who were either at risk or symptomatic for coronary artery disease, coronary artery disease mortality was reduced by consumption of up to six drinks daily, and optimal risk reduction was achieved at three to five drinks per day (Table 3). These results indicate a powerful secondary prevention benefit from drinking for coronary artery disease patients.

Talking to People about Drinking

The fear of discussing benefits from drinking extends far beyond nervous secondary school educators.

1. Most prominent medical and public health authorities damn alcohol at every turn. According to Klatsky, "consideration of the harmful effects [of alcohol] almost completely dominates discussions in scientific and medical meetings, even when . . . consider[ing] light to moderate drinking."[30] A 1990 government pamphlet, *Dietary Guidelines for Americans,* declared: "Drinking them [alcoholic beverages] has no net health benefit, is linked with many health problems, is the cause of many accidents, and can lead to addiction. Their consumption is not recommended."[31]

2. Even researchers who find benefits from alcohol seem reluctant to describe them. A *Wall Street Journal* article[32] about Rimm et al.[22] noted: "Some researchers have played down alcohol's beneficial effects for fear of encouraging inappropriate drinking—'We have to be very cautious in presenting this type of information,' says Eric B. Rimm." This report of the study's results—"Men who consume from one half to two drinks a day reduce their risk of heart disease by 26% compared with men who abstain"—failed to mention the 43% reduction in risk from more than two and up to four drinks a day and the 60% reduction from more than four drinks daily.

3. No American medical body will recommend drinking as healthful. The benefits of alcohol in reducing coronary artery disease are similar to those of the low-fat diets recommended by nearly all health and medical organizations, but no medical organization will recommend drinking. Typically, a conference of prominent researchers and clinicians convened in January 1990 declared, "Until we know more about metabolic and behavioral effects of alcohol and about its linkage to atherosclerosis, we have no basis for recommending either that patients increase their alcohol intake or that they start to drink if they do not already."[33] Perhaps additional research published since the conference would convince such a group to make this recommendation, but it is highly unlikely.

4. This attitude is, paradoxically, related to American clinicians' refusal to tell excessive drinkers to drink less. The United States has systematically elimi-

nated efforts to help people reduce alcohol consumption in favor of instructing all problem drinkers to abstain.[34] We are not deterred by the finding that the abstinence prescription fails for a sizable majority of such drinkers, or that 80% of problem drinkers are not clinically dependent on alcohol.[12] Even other temperance cultures accept drinking reduction programs. In Britain, significant reductions in consumption have resulted from programs in which primary care physicians conduct drinking assessments and advise excessive, but nondependent, drinkers to lower their alcohol intake.[35]

5. According to the data, alcohol has a role as a therapy for coronary artery disease, a role that scares American clinicians. Alcohol could be recommended as a therapy for coronary artery disease, just as patients with coronary artery disease are instructed to follow cholesterol-reducing diets. Cardiomyopathy and concurrent medications, among other things, would need to be considered in consultations with individual patients. One would think that findings that alcohol reduces coronary artery disease deaths for those at risk for coronary artery disease could not be ignored, but they are. Suh et al.,[21] who reported such a relationship, nonetheless concluded, "alcohol consumption cannot be recommended because of the known adverse effects of excess alcohol use."

6. Americans would not drink more even if we told them to. Health professionals seem to live in fear that, on hearing that it is good to drink, people will rush out and become alcoholics. They may be reassured to know that according to the Gallup poll,[6] "fifty-eight percent of Americans are aware of recent research linking moderate drinking to lower rates of heart disease," but "only 5% of all respondents say the studies are more likely to make them drink moderately." Meanwhile, although only 2% of respondents said they averaged three or more drinks daily, more than a quarter of all drinkers planned to cut back or quit drinking altogether in the coming year.

7. Those we tell not to drink also do not listen to us. Young people, who are the primary targets of the abstinence message, blithely ignore it. Almost 90% of high school seniors have drunk alcohol (usually illegally obtained), and 30% (40% of boys) have drunk five or more drinks at one sitting in the 2 weeks before being surveyed, as have 43% of college students (over half of college men).[11]

8. Advice about healthy drinking should not differ for children of alcoholics. The American medical preoccupation with alcoholism has led to the view that some children may be genetically destined to be alcoholics. Although positive evidence has been presented (along with negative evidence) about the heritability of alcoholism, the model that posits that people inherit loss of control—that is, alcoholism per se—has been soundly refuted.[36] Whatever people may inherit that heightens susceptibility to alcoholism operates over years as a part of the long-term development of alcohol dependence. Moreover, a large majority of children of alcoholics do not become alcoholic, and the majority of alcoholics do not have alcoholic parents.[37]

Telling children they are born to be alcoholic on the basis of the available evidence is a double-edged sword. The broadest assertion yet made of the association of a genetic marker and alcoholism is Blum et al.'s[38] claim for the A1 allele of the dopamine D_2 receptor. If we accept Blum et al.'s results at face value (although they have been disputed by many and have never been matched by any other than the original research team[39]), fewer than a fifth of those with the A1 allele would be alcoholic. This means that more than 80% of those with the gene variant would be misinformed if they were told they would become alcoholics. Because children readily ignore advice not to drink, we would be left with the self-fulfilling impact of our efforts to convince children with a putative genetic marker that drinking will lead them inevitably to alcoholism. Telling them this would only make it less likely that they would be able to control the drinking most will eventually initiate.

The goal of eliminating drinking for all Americans was officially abandoned in the United States in 1933. The failure of Prohibition implies that our public policy should be to encourage healthy drinking. Many people drink to relax and to enhance meals and social occasions. Indeed, human beings have discovered many health-related uses for alcohol over the centuries. Alcohol is used as a medicine to alleviate tension and stress, to promote sleep, to relieve pain in teething babies, and to assist in lactation. Perhaps public health policy should build on the healthy uses to which most people put alcohol. At least, perhaps we can simply tell the truth about alcohol. □

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